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ABSTRACT

This report responds to the 1992 Virginia legislative direction and offers suggestions on how the state's colleges and universities should change their resource allocations to extend the reach of teaching faculty and develop new and creative approaches to the work of teaching, research, and service. Restructuring in the areas of staffing productivity and curricular change is urged. Recommendations are offered in the context of the expectation that at least 65,000 additional students will seek higher education by the year 2001 and the approval by voters, in 1992, of $472 million in bonds which will allow accommodation of about 40,000 more students. The report urges that the following specific tasks be completed by 1996: efforts toward de-bureaucratization and decentralization of both state government and the colleges and universities; state enrollment planning to restructure at a reasonable pace; increased institutional planning; Council of Higher Education advocacy of faculty salaries and development; construction, renovation, and maintenance of instructional and research space; procurement of superior instructional and research equipment; funding for library materials; and provision of adequate student financial aid. The report suggests that funding increases should be targeted toward improving salaries and providing incentives to help institutions extend the reach of current faculty. Tasks to be completed by century's end include changing to a competency model rather than the current "credit-for-contact" model of educational delivery and effective use of technology in classrooms and laboratories. (JB)

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ED 367 245

CHANGE AND IMPROVEMENT IN VIRGINIA HIGHER EDUCATION: A PRELIMINARY REPORT TO THE GOVERNOR AND GENERAL ASSEMBLY

January 12, 1993

SCHEV STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA

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Preface

This report is the second major document to be issued by the leadership of Virginia higher education since the Commission on the University of the 21st Century published "The Case for Change" in 1989. The first was presented to the Governor and the General Assembly by the presidents of the senior colleges and universities, the chancellor of the Virginia Community College System, and the director of the State Council of Higher Education for Virginia. In July 1991, it was endorsed by the Council of Higher Education and supported by the Secretary of Education.

The two reports and "The Case for Change" are all of a piece. The Commission on the University of the 21st Century offered Virginians a vision of the role higher education would play in the rapidly changing world of which we are a part and what will have to happen within our colleges and universities to prepare themselves for roles of leadership in the early years of the new century.

The July 1991 paper came in the midst of a historically significant downturn in the Virginia economy. Colleges and universities, buffeted by unprecedented budget cuts that eventually totaled $413 million, were struggling to adapt to changes thrust upon them by unwelcome necessity.

The paper reviewed what had happened and where Virginia higher education ranked among the states. It then called for additional funding, urging Virginia's elected leaders to continue their long-standing commitment to competitive faculty salaries, adequate operating budgets, and new buildings as enrollments grew. Finally, it pledged substantial restructuring of higher education: leaner, less bureaucratic, effective, and responsive.

One part of the paper's vision was realized when, in November 1992, the people of Virginia approved a General Obligation Bond issue that will provide $472 million for new building construction and renovation for colleges and universities. The Governor and the General Assembly had authorized the referendum during the 1992 session with strong bipartisan support.

In 1992, the Governor and the General Assembly, lacking sufficient tax revenues to meet all state needs and obligations, authorized large increases in tuition and fees to maintain the colleges and universities. They appropriated unprecedented increases in financial aid to help needy students who are not able to pay the higher tuition.

This paper, which responds to direction included in the 1992 Appropriation Act, offers suggestions about how Virginia colleges and universities can continue the progress outlined in previous reports and change their resource allocations to extend the reach of teaching faculty: to reach more students with modest staffing increases. If more money is available, Virginia's colleges and universities can do even more and do it better and more easily. On the other hand, scarcity and judicious state incentives can combine to elicit new and creative approaches: in this

instance, creative approaches to the work of teaching, research, and service that is the mission of higher education.

Everything said in the report of the Commission on the University of the 21st Century remains valid. This is a report, the Commission wrote, "for good times or lean." Everything said in the presidents' July 1991 paper remains valid. More state funds for higher education are desperately needed for quality to remain high and tuition increases to abate. "In the long run," the Commission said, "a state can aspire to excellent education only if it is willing to pay for it."

Indeed, the Council's preliminary estimate is that the state's colleges and universities will need more than $200 million in additional state funds in 1994-96 to return faculty salaries to the 60th percentile nationally and to provide student aid, equipment and technology, library materials, new positions for enrollment growth, new entities already begun to serve additional students, and adequate maintenance of buildings and campuses.

The proposals in this new report build upon what has gone before. The report continues a conversation begun in 1989 about the importance of higher education among the services provided by state government. The change and improvement we advocate stands by itself, regardless of economic conditions. Much has been done during the three years since "The Case for Change" proposed an agenda for higher education. But more remains to be done, and the difficult times in which we issue this preliminary report simply add another dimension to the urgency of getting on with the work.

1992 Virginia Acts of Assembly, Chapter 893
Language Relating to Staffing Productivity and Curricular Change

It is the intent of the General Assembly that Virginia's public institutions of higher education shall begin to effect long-term changes in the structure of higher education to minimize costs, as well as to prepare for the demands of projected enrollment increases. To accelerate this process, the Council of Higher Education, in conjunction with the colleges and universities, is directed to pursue opportunities to restructure in the following areas:

1) Staffing Productivity: This area shall include, but not be limited to, the revision of staffing guidelines to include minimum workload measures for faculty, adjusted for the type of institution, program, and the recognition of research conducted by faculty. This review should also include the development of incentives to reward and encourage teaching. In its review of the guidelines, the Council and the institutions of higher education shall explore means to reduce levels of administrative support positions, with the intent of converting these positions to teaching positions.

2) Curricular Change: As a coordinating board, the Council is encouraged to continue its role in the development of new ways of teaching and delivering instruction, and to press for rigorous review of existing programs and courses to eliminate duplicative, high-cost, or low productivity programs.

The Council will present a preliminary report to the Governor and the General Assembly on actions taken and its recommendations prior to the 1993 Session of the General Assembly.

CHANGE AND IMPROVEMENT IN VIRGINIA HIGHER EDUCATION: A PRELIMINARY REPORT TO THE GOVERNOR AND GENERAL ASSEMBLY

In 1989, the Commission on the University of the 21st Century spoke of the important changes Virginia's colleges and universities will have to make to prepare for the future. Then, in 1992, the General Assembly asked the Council of Higher Education, in conjunction with the colleges and universities, to "pursue opportunities to restructure" in the areas of staffing productivity and curricular change. This report addresses the questions and concerns of both the Commission and the General Assembly. It begins by discussing several assumptions under which the state and the colleges and universities must operate as they plan for the next several years. It follows with specific recommendations for the state and the institutions for the 1994-96 biennium. It concludes by proposing a fundamental shift in how colleges and universities deliver services.

The Commission on the University of the 21st Century posed the following question: "How can Virginia cause constructive and fundamental change within its colleges and universities so they will be ready to meet the demands of life in the 21st Century?" The Commission talked about a curriculum that responds to the need for mathematical, scientific, and technological competence; that helps students develop competence in public speaking, writing, listening, and seeing the world around them; that offers students an entirely different perspective -- a global perspective -- on the subjects they choose to study; and that introduces students to American thought in all its complexity.

Now added to the Commission's call for constructive change are additional and powerful external factors. First, the Commission envisioned a "predictable flow of funds to institutions" to support restructuring. "While being well funded does not necessarily guarantee high quality results," the Commission wrote, "it clearly helps." Given the existing economy and public policy decisions, it now appears that colleges and universities may be asked to guarantee high quality results without significant additional funds. There is a real question about the extent to which this is possible.

Second, at least 65,000 additional students, graduate and undergraduate, will seek higher-education opportunities on the main campuses of Virginia's public colleges and universities by the year 2001. This estimate was used to justify the unprecedented general obligation bond issue authorized by voters last November. It represents the growing enrollments in Virginia's elementary and secondary schools as well as older students and those from other states who come here because of our excellent colleges and universities. This estimate may be low, particularly in light of the many military personnel in Virginia who, in changing times, will seek to prepare for new careers. In addition, college-going rates may increase as public school reforms associated with the world-class education initiative take effect. Furthermore, there are thousands more students who will want to study off-campus as their jobs and family responsibilities permit.

Virginia voters helped prepare for growth and change when they voted November 3 to

authorize $472 million in bonds to support higher education facilities. Because of this new construction and renovation, Virginia public higher education will have space for about 40,000 additional students. Others can be accommodated by breaking some old patterns of behavior and using new approaches.

Accommodating the physical presence of students, however, is only part of what needs to be done. How colleges and universities prepare to serve these additional students remains the critical issue. The question is not just how to provide access, but how to provide access that will equip Virginia and the nation to flourish in a fiercely competitive global economy.

The foundation of any plan to restructure higher education is built upon several assumptions. First, it is widely agreed that Virginia's public colleges and universities must continue to change and improve so they will be ready to meet the demands of life in the 21st century. The Commission on the University of the 21st Century recognized this imperative, "not just because enrollments will swell, but because the world's social and economic orders are changing at an unprecedented pace that appears to be accelerating."

Second, Virginia's public colleges and universities will assume responsibility to provide higher education for more students. Again, the Commission noted that "the importance of higher education in this time of rapid and often unpredictable change cannot be overemphasized. Virginia's colleges and universities are a wellspring of new ideas, technologies, and human talent for the state and the nation."

A third assumption is that Virginia's political and educational leaders will work together to ensure broad access to an excellent and well-funded system of public higher education. Virginia's colleges and universities consistently are considered among the best in the nation. They compare favorably with those in other states and with other activities of state government in terms of being lean and efficient. The value Virginians receive for their higher education dollar is excellent.

But Virginia now ranks 43rd among the states, slightly ahead of Mississippi and Louisiana and somewhat behind Alabama and Arkansas, in the amount of state revenues per student it appropriates to higher education. The reciprocal of low state appropriations is high tuition. Recent tuition increases mean that Virginia residents now pay more to attend their public colleges than residents of virtually every other state. Every effort should be made to reverse the trend of replacing state appropriations with tuition revenues. Affordable tuition is good public policy.

The $413 million in state support that has been cut from the budgets of the public colleges and universities over the last three years should be returned to the institutions. But unless the state's overall financial situation improves and its current priorities change, the money cannot be returned quickly. Colleges and universities have to assume that the rest of the decade will be lean and difficult for all of state government, and that most additional money for higher education will be used for salaries, instructional technology, equipment, and libraries.

To return faculty salaries to the 60th percentile level of national salaries in 1994-96 would cost an additional $120 million from the state's general fund. A preliminary estimate of the additional state funds needed for student aid is $50 million. A new lease program to provide instructional equipment and technology would cost $15 million, and a fully funded library materials guideline would add another $10 million if Virginia is to continue to provide faculty and students with these basics of good instruction. The new enrollment-related positions called for in this report will cost $9.5 million in state funds. In addition to this is an estimated $5 million for operating new entities such as James Madison's and Radford's new colleges and George Mason's new institute in Prince William County. Staffing for new buildings that will open by 1996 and the additional funds needed to adequately maintain existing facilities add about $13 million more in state funds.

These needs for additional state funds exceed $200 million and do not include salary increases for classified workers employed by colleges and universities or inflation in the costs of goods and services. In addition, they do not include about $120 million in student tuition and fees needed to fund the nongeneral fund portion of most of the items mentioned. These estimates of the financial requirements of maintaining a truly fine system of higher education dramatize the challenge to the Commonwealth in a decade that will not be one of business as usual.

A fourth assumption is that faculty must be adequately compensated. Both good faculty morale and the capacity to attract the best faculty to Virginia will become even more important as institutions ask faculty to reconceive their teaching, research, and service responsibilities. It is hard for people who are feeling underpaid and demoralized to be creative. Additionally, the kind of curricular change and diversity called for by the Commission on the University of the 21st Century can only come from a diversified faculty, one that will be hard to recruit and retain without appropriate salaries and support. The budget cuts of the past three years, coupled with actions affecting all state employees, have damaged faculty morale and left Virginia's faculty salaries in a much weaker competitive position when compared to national peer groups. The Council of Higher Education will continue to make faculty salary increases a top priority in its budget recommendations. We should return each institution to the 60th percentile of its faculty salary benchmark group. To do so will help Virginia to be competitive in recruiting excellent new faculty as large numbers of faculty retire.

The final assumption is that the change that needs to occur in restructuring higher education is ultimately the responsibility of the faculty and their institutions, not state government. The state has a responsibility to create an environment in which change and improvement can occur, not to dictate specifically how it should occur at the college or university. As the Commission on the University of the 21st Century noted, Virginia higher education has achieved its excellence in part because institutional autonomy has been preserved. There continues to be a need for the varieties of educational experience offered in Virginia's system of public higher education.

These assumptions are debatable, but in the early days of 1993 they appear to be

realistic. Colleges and universities simply will have to use their resources differently in order to fulfill their missions.

The 1992 General Assembly, aware of the challenge the coming decade will present for higher education in the state, asked the Council of Higher Education in conjunction with the institutions to study ways "to effect long-term changes in the structure of higher education to minimize costs." Virginia's colleges and universities need to figure out how to change so that they both minimize costs and prepare students to meet the demands of the future; higher education must continue its efforts to combine the imperatives of efficiency and effectiveness.

What We Should Do By 1996

Virginia and its colleges and universities have already begun taking significant steps toward preparing for the next century. But, in addition to the rigorous, long-term self-analysis and fundamental change necessary to meet the challenges of the future, the state should give institutions more flexibility and the institutions will have to take specific, short-term actions to serve approximately 10,000 additional students by 1996.

Changes in Management

The agencies of central state government have served Virginia, including colleges and universities, well over the years. Because they have, Virginia has been named as the best-managed of all states. Excellent professional relationships have been developed and the need for new approaches is not at all the result of ill will. New approaches are needed because Virginia cannot flourish in the future using its current management practices.

Central state government should adopt a corporate management model of operation, at least in regard to higher education. It should set general policy, provide service to institutions in their decisions on how to implement those policies, and monitor results. Operational decisions should be made at the closest point to the delivery of services -- at the college or university. The term often used to describe this approach is decentralization, but what we really have in mind is "de-bureaucratization," both in state government and in the colleges and universities. When the state simplifies its relationships with colleges and universities, they will have additional flexibility to restructure internally and concentrate resources -- on instruction in particular, but also on research and service. Central state government, which currently provides a high level of expertness and professionalism to the institutions, could strengthen the quality of its work as well as save money by adopting this management model.

This flexibility should permit those institutions that have the capacity and wish to do so to operate their own financial, personnel, purchasing, and capital outlay systems. The institutions, of course, would comply with both state law and state policy and generally accepted accounting principles and other standards. Other models should be established to accommodate colleges and universities that do not have the capacity to decentralize to this degree, including cooperative relationships among institutions. In some instances, central agencies should become

"service bureaus" for institutions that are too small to administer all functions independently. The objective of these changes is to give institutions maximum flexibility to concentrate their resources on direct services to their clients.

One change that would benefit all institutions, students, and faculty is a policy that allows institutions to keep all unspent funds at the end of each year and biennium. This would be a strong incentive for economy -- "you save it, and you can keep it for reinvestment in learning."

Another good change would allow colleges and universities to use all of the overhead costs related to a research grant. When a college or university gets a federal grant on contract to do research, it is usually allowed to charge the granting agency for a portion of the overhead of operating the institutions. Under current policy, a portion equivalent to 30 percent of that overhead charge is subtracted from what would normally be the institution's general fund appropriation. If that portion of the overhead charge were not subtracted from the general fund appropriation, the institution could keep all of the overhead reimbursement and use it for research. This change in budget policy would explicitly recognize the value of research and would be a strong incentive to faculty seeking external funding. Another change in budget policy would allow institutions to keep investment yields on other forms of revenues, including tuition and fees. These changes could be phased in over four years so they do not affect the state budget suddenly.

Colleges and universities will continue their critical self-examination and streamlining of administrative functions. They responded to the budget cuts of the early 1990s by concentrating resources on teaching; administrative positions were eliminated to protect faculty positions. Additional administrative savings may be difficult to realize, but institutions will continue to look for them.

Changes in the way the state relates to its public colleges and universities -- from central control to central policy-setting and post-audit evaluation -- and in the way institutions themselves manage their affairs are part of restructuring Virginia higher education. Central state agencies have to cooperate by eliminating desirable but unnecessary procedures and reducing redundancy. A system that is "error proof" is expensive; it also is apt to be paralyzed by checkers checking the work of checkers. Real restructuring will require real flexibility.

Enrollment Planning

Enrollment from 1994-95 forward will grow at a rate of about 8,000 to 10,000 full- and part-time (or "headcount") students a year, or 4,000 to 6,000 full-time equivalent (FTE) students. ("Full-time equivalent" is measured by the total credit hours recorded by an institution. One FTE student is equal to 15 hours per semester for undergraduate students and 12 hours per semester for graduate students.) This affords higher education the opportunity to restructure itself at a reasonable pace, a privilege not every American enterprise has enjoyed. Table 1 provides the expected pattern of on-campus enrollment growth in the 1990s.

Table 1
Expected Pattern of On-Campus Enrollment Growth
1993 to 2001

	Fall Headcount		Regular Session FTE	
Year	Total	Change	Total	Change
1992-93	269,500	--	190,600	--
1993-94	269,500	--	190,600	--
1994-95	277,948	8,448	195,505	4,905
1995-96	286,662	8,713	200,536	5,031
1996-97	295,648	8,986	205,696	5,160
1997-98	304,916	9,268	210,989	5,293
1998-99	314,475	9,559	216,419	5,429
1999-00	324,333	9,858	221,988	5,569
2000-01	334,500	10,167	227,700	5,712
		65,000		37,100

Because of tuition costs and demographic factors, the pattern of student enrollment among the three types of institutions -- doctoral-granting, comprehensive college and university, and two-year college -- probably will shift somewhat toward the community colleges. For planning purposes, the Council will assume that, during the 1994-96 biennium, the doctoral institutions will add between 4,000 and 4,250 FTE students. Comprehensive colleges and universities will add between 2,000 and 2,250 FTE students, and two-year colleges (23 of 24 of which are part of the Virginia Community College System) will add between 3,750 and 4,000 FTE students.

(Virginia's doctoral-granting institutions are The College of William and Mary, George Mason University, Old Dominion University, the University of Virginia, Virginia Commonwealth University, and Virginia Tech. The comprehensive institutions are Christopher Newport University, Clinch Valley College, James Madison University, Longwood College, Mary Washington College, Norfolk State University, Radford University, Virginia Military Institute, and Virginia State University. In addition to the 23 community colleges, Richard Bland College is a two-year institution.)

Deciding how to accommodate 10,000 additional FTE students by 1996 (approximately 5,000 per year) will be part of building the 1994-96 Virginia budget. The Council suggests that planning should proceed on the assumption that funding increases should be targeted toward improving salaries and providing incentives to help institutions extend the reach of current faculty. Every effort must be made in the near term to find ways to teach more students without diminishing quality. This does not necessarily mean teaching larger classes or more courses. Investment in technology and curricular change will help, if we sustain and develop our human capital. We discuss these possibilities more fully in a later section of the paper. As a general system-wide planning framework, the Council recommends what is outlined in Table 2:

Table 2
Enrollment Growth and Additional Staff
1994 to 1996

	Doctoral Institutions	Comprehensive Institutions	Two-Year Institutions	Total
Additional FTE Enrollment Responsibility by 1995-96	4,000-4,250	2,000-2,250	3,750-4,000	10,000
FTE Enrollment Growth Without Additional Staff & Faculty	4,000-4,250	1,200-1,450	1,000-1,300	7,000

Within this framework, faculty and staff would be added to meet the demands of at least 3,000 of the 10,000 FTE students in 1994-96. New colleges, campuses, centers, or large-scale curricular revisions would receive special consideration for additional faculty and staff. The approach for 1994-96 does not mean that Virginia's colleges and universities could absorb even more students after 1996 without funding for growth, including funding for additional faculty and staff.

This planning framework for 1994-96 is based on the facts that the doctoral-granting universities have the largest economies of scale, have the best opportunities to benefit from a major state policy shift to decentralization, and have benefitted the most from traditional staffing guidelines and the resultant funding. Those staffing guidelines have built into them time for faculty to teach, but also considerable allowances for research and service. As a group, these universities have about the same number of faculty, staff, and students as they did in 1990-91, the year in which budget cuts intensified.

Most of the comprehensive colleges and universities are smaller than the doctoral-granting institutions. But because many have graduate programs, they also have benefitted from favorable staffing guidelines that assume the need for faculty time for research and service. Since 1990-91, as a group of institutions, they have added about 1,700 students while maintaining virtually the same number of staff and faculty.

The Community College System includes colleges that range from very small to the second largest in the United States. Since 1990-91, the system has grown by about 5,100 students and added about 78 full-time faculty while relying on even more part-time faculty to help accommodate growth.

Planning to serve approximately 10,000 more full-time equivalent students by 1995-96 begins with the enrollment planning process for 1994-96. The Council proposes to integrate its responsibilities to approve enrollments and to make budget recommendations. Between January and September of 1993, the Council will work with each institution to determine what portion of the students, particularly Virginia students, it can accommodate. At the same time, the Council will develop specific budget recommendations for new faculty, staff, and other resources.

Institutional Planning

How each college or university adapts to the realities of the 1990s -- greater demand for higher education coupled with the likelihood of lean times -- will be its decision. But there are clear signals -- from the public, educational leaders, and institutions themselves -- about the issues colleges and universities have to address, and the Council strongly advises institutions to continue working on them in the next biennium.

How each institution proceeds should be determined within its governance system by faculty, staff, and governing board. Again, the Commission on the University of the 21st Century spoke to the point: "We believe that in the long run the strongest institutions are those that enjoy considerable autonomy."

But, the Commission added, "this places great responsibility upon governing boards and presidents, who must demonstrate creativity and willingness to take risks or the system will stagnate."

The risks are real, but so is the excitement of finding creative ways to meet higher education's responsibilities to its students. Faculty who are willing to experiment with new ways of structuring their courses need support from presidents and boards. For example, traditional lecture courses can be taught in ways that liberate both faculty and students from unnecessary constraints. Students could view course lectures on video and converse by electronic-mail with their professors about questions raised by the lecture, in preparation for discussion groups held later on campus. Or faculty could meet intensively with students for several weeks, after which students would spend several more weeks working alone or together on research projects, followed by a presentation of their results in culminating class sessions. The possibilities, if not endless, are greater than the teaching formats now generally found on campuses.

One way to bring about the fundamental change needed to realize the vision of higher education is to look closely at the curriculum. Colleges and universities are assessing their goals for student learning to reflect what students will need to know and be able to do in the 21st century. Colleges and universities could reduce the scope and specialization of the curriculum. A change in the curriculum -- for example, the consolidation of two or three courses whose content overlaps -- could result either in larger classes taught by fewer faculty or in more sections available for students. This investigation of the curriculum crosses traditional academic boundaries, and not just to realize efficiencies. To be able to respond to the demands of an

increasingly complex society, graduates will need to be able to work in multidisciplinary ways.

The Council of Higher Education is statutorily responsible for preventing or eliminating unnecessary duplication of programs among institutions. Discussions with academic administrators and faculty indicate that unnecessary duplication within institutions, not among them, might be an even greater problem. One department chair determined that there was as much as a 40 percent overlap between three introductory courses, based on reviews of course syllabi and textbooks. Duplication of curricula among departments and even within them is and should be beyond the Council's purview. But institutions might achieve some savings by eliminating such redundancy where it is not absolutely necessary.

Course requirements, academic concentrations, and the courses themselves are being viewed in light of student learning objectives, with those that demonstrably address them constituting the curricular core -- that which must be taught, and taught well, before anything else is added. Deans, provosts, and presidents are trying to determine, within restricted resources, which activities to stop in order to start doing something new -- that is, how growth can occur by substitution rather than by addition. This need not be just stopping academic programs; indeed, stopping some administrative activity would do more to focus resources on instruction. Difficult choices must be made.

It is probably much more difficult to be a faculty member in 1992 than it was 30 years ago. Even so, faculty must be at the forefront of the change that is necessary if colleges and universities are to remain accessible, high quality institutions.

Teaching today probably is done under more stressful conditions than in the past. For one thing, students who come to higher education have become an increasingly diverse group. They lack a common culture and, often, a common set of skills on which a teacher can draw in presenting new material. The same diversities that are so stimulating -- those of gender, race, age, and ethnicity -- also make teaching in traditional formats very difficult. Even the outcomes of teaching have become less certain. Fifty years ago, a major role of higher education was to give the small segment of society who had been chosen for leadership, usually by birth, cultural polish and the tools to do the job. Now higher education serves any person who wants and can benefit from access to it, and its role truly is that of gatekeeper in a fiercely competitive society. The pressure on faculty is intense for they are deciding who makes it and who does not. We are not about to return to the previous model.

Conversations with people around the state, with legislators, students, parents, interested citizens, and faculty themselves, indicate that some faculty, particularly at major universities, should teach more. But much more pressing is the need for faculty in general to extend the reach of their teaching to include more students. This can be accomplished without loss of quality only by re-conceiving the entire enterprise: by teaching differently, by using faculty time differently, and by taking advantage of modern technology. Faculty surveys and conversations indicate that this involves a change in priorities. It is not that faculty do not work hard; it is a question of what faculty work at.

Part of faculty time is spent on service to their institution and the community. This work includes speeches, interviews, and extension activities off campus, and administrative and committee work on campus. As part of college and university governance, for example, large numbers of faculty and staff participate in elaborate committee structures. Much committee participation seems to be for information dissemination rather than for decision making. Faculty should be consulted and have a voice, but the amount of time spent in committee work may have become excessive. Perhaps electronic mail renders elaborate and time-consuming committee structures obsolete except where responsibility to make specific decisions is vested in committees. Faculty time and resources may be shifted from institutional service to teaching for institutions to accommodate more students.

Research expectations have increased at almost every level of higher education. For one thing, it is essential for all faculty to engage in the scholarly activities necessary to remain current in the disciplines and to incorporate current knowledge into their teaching. For another, younger faculty are under pressure to produce scholarly publications in order to be tenured or promoted. The primary loyalty of faculty is often to their disciplines, because their reputations among their peers determine their marketability, access to research funding, and numerous perquisites. -The need to produce scholarship is one of the chief pressures in faculty life.

We do not recommend restricting sponsored research; this has come to be an important indicator of institutional status and has value in economic development. In fact, what universities have tried to do over the years is balance research among the disciplines by saying in effect that they will support research with state funds in those academic disciplines for which there is little sponsored research support. Thus, state-supported "departmental" research becomes a counter-weight to a massive scientific establishment. For this reason alone, though it is not the only reason, departmental research is very important. Funding should be provided for it. Nevertheless, departmental research should be carefully planned, peer-reviewed, and yield results.

The implication of accommodating more students with the same number of faculty in some institutions is that the institutions will have to make decisions about how to allocate faculty time in order to increase the collective time they devote to teaching. The overall priority of teaching will be heightened and some resources will be shifted to instruction as a result.

Some of those resources should be reserved for faculty professional development. Little in the training of most faculty prepares them to use the range of technologies available to help them deliver instruction more efficiently and effectively, for instance. If institutions are to realize the full benefits to be gained from using faculty time differently, faculty will have to be supported in educating themselves and each other about how they might extend their instructional reach technologically. The Council can multiply the effects of this faculty development by coordinating on-going exchanges among faculty about what works best, through meetings, electronic-mail networks, and electronic bulletin boards.

Conversation on several Virginia campuses already has turned to how faculty are

evaluated and rewarded. It has been observed that "what gets measured and rewarded gets done." The Commission on the University of the 21st Century wrote that "colleges and universities must ensure that faculty are recognized and rewarded for quality teaching as well as provided opportunities for improving their teaching. . . . The types of people employed in colleges and universities to offer instruction, the terms and conditions of their employment, and the systems by which they are rewarded for their performance, all will have to change. . . ." If more and better teaching is important -- and it is -- the criteria for pay raises, promotion, and tenure should emphasize and reward teaching.

Other conversations outside college and university communities suggest that tenure in higher education may be misunderstood. Where it exists, tenure should be preserved. It is a covenant between the individual and the institution, helping to ensure mutual loyalty and academic stability. But where tenure as a system is inhibiting improvement in how the faculties use their time, or if abuses of the tenure system are in some measure responsible for an imbalance that exists between teaching and research, it is an issue. Tenure is historically a guarantor of intellectual freedom, not a guarantee of unilateral faculty control over scheduling and curriculum. It protects faculty from the imposition of ideology and the requirement that they teach a prescribed curriculum as a matter of doctrine. But it should not inhibit an institution's governing board and administration from setting the teaching, research, and service responsibilities of the faculty.

Council of Higher Education Planning

In developing the 1994-96 budget, the Council of Higher Education will continue to advocate the traditional underpinnings of Virginia's excellent system of higher education: faculty salaries and development; construction, renovation, and maintenance of instructional and research space; superior instructional and research equipment; funding for library materials; and student financial aid. Recommendations for new faculty and staff will be made following discussions with institutions on enrollment growth and other factors.

As colleges and universities proceed with change, the Council's responsibility will be to tell Virginians how students, faculty, and institutions are affected. What is reported and how it is reported will be worked out during the coming year with Virginia's colleges and universities, involving the greatest numbers of faculty possible. Among the items that should be considered are these:

- Admissions standards and measures of the first-year class against those standards;
- High school courses, or remedial courses, taken by first-year students;
- Profiles of teaching and learning at each college and university, including:
  - -- Average class size;

- -- Proportion of undergraduate students enrolled in courses taught by a full or associate professor;

- -- Proportion of undergraduate students who have a small class or seminar experience;

- -- Proportion of students who have some kind of summarizing experience (thesis, recital, comprehensive examination) in their major before graduating;

- Graduation rates of students in four, five, six, and seven years;

- Post-graduation profiles of recent classes, including enrollment in professional and graduate schools and employment;

- The quality of the college or university's assessment of student learning program; and

- The amount of outside funding the college or university attracts for research.

In addition to these items, the Council staff will monitor traditional measures of institutional health and update reports on where Virginia ranks among other states in state financial support and other measures.

What We Should Do By the End of the Century

Virginia's record of serving more students with relatively few additional staff is impressive by any standard in either the public or private sector. Between 1980 and 1992, student enrollment increased by 27 percent and academic staffing by 9 percent. This overall growth of 9 percent in staff results from a 16 percent increase in faculty and less than a 3 percent increase in support staff. Virginia's public institutions now serve close to 300,000 students on their main campuses and at off-campus sites.

Virginia's colleges and universities employed a number of strategies to limit the number of new staff used to serve such a large increase in enrollment. In many instances, they added part-time faculty and graduate teaching assistants, but few full-time faculty. They increased the number of hours that full-time faculty spend with students in classrooms, laboratories, and other scheduled contacts. Virginia's institutions also taught larger classes.

Higher education cannot rely on using the same strategies it used in the 1980s to meet the challenges of 1990s. Additional economies of the size and scale needed to meet enrollment demands simply do not exist. The efficiencies that can be realized by using the same strategies will yield few marginal gains. We need to shift the paradigm.

Although institutions will continue to rely to some degree on traditional forms of instruction, we need to move away from almost exclusive use of the "credit-for-contact" model. This is an input-based model, in which so may hours spent in a classroom entitle a student to a coupon in the form of credit hours, and so many coupons can be redeemed for a degree. But this model locks institutions into labor-intensive modes of instruction and says little about what the student will know or be able to do once that degree is in hand. The Pew Higher Education Research Program has remarked that "the emphasis on expended time over the actual attainment of knowledge and skills represents the classic fallacy of mistaking input for output."

In a traditional model, the process by which a student learns is fixed and the outcome varies. A competency model, by contrast, presumes that what the student knows at the end of the process is most important. The expected outcomes are fixed but neither how long it takes nor how the student develops mastery is prescribed. Some students might take two years to develop what the faculty agreed were the capacities a graduate of the program should have, while others might take seven. Some might meet a competency objective in a few weeks while others might take a traditional semester. Some might develop certain abilities and master certain knowledge in classrooms, while others would do so with a television screen or computer. Some competencies would be developed in private study, while others would come as a result of work in teams with other students or with faculty. We need not lock all students into learning at the same pace in the same way.

Virginia's colleges and universities can move away from "credit for contact" in numerous ways that reflect institutional diversity. Many highly successful industrial training programs or the curricula of several American experimental colleges and universities are not based on "seat time" accumulated by students. Distinguishing between practices that are comfortable and those that are essential is at the heart of institutional self-examination.

Perhaps the best place for institutions to begin to develop competency-based education is in the majors. One computer science department in Virginia, for example, has proposed to make competencies rather than courses the basis of its requirements. Rather than having to take certain courses, students would be required to demonstrate to a panel of faculty judges, through a series of "exhibitions," an increasing mastery of the body of knowledge and skills that the faculty has decided are crucial to its field. The faculty's role would be to make available, and advise students to avail themselves of, the various learning experiences that will help each one develop that progressively sophisticated mastery. Faculty would be rewarded for coaching their students to success in this process.

To avoid the devaluation of the degree, it is critical that students actually emerge from this kind of experience with learning equivalent to or better than they would have gained from hours spent in a traditional classroom. The challenges in developing a competency-based curriculum are for faculty members to come to consensus on what kinds of ability they expect from students for each kind of credential, to become more sophisticated about measuring student learning, and to develop curricula that are both cost-effective and flexible enough to capitalize on the many ways in which human beings learn. This will clearly be harder to do in some

disciplines than in others. But given the importance of breaking the credit-for-contact paradigm, we recommend that institutions immediately identify departments or colleges in which to begin the development of these competency-based curricula.

Another aspect of the university of the 21st century is effective use of technology in classrooms and in laboratories. Old Dominion University, for example, proposes to develop a statewide educational telecommunications network in cooperation with the Virginia Community College System. Students would complete the first two years of the baccalaureate degree at a community college. The last two years would be completed through Old Dominion University by using satellite, computer, and telephone technologies. Such a program recognizes the advances in technology and puts these advances to use in providing educational services to thousands of people.

Used properly, technology can improve the quality of scholarship and be an efficient tool in student learning. It can free faculty for more and other kinds of teaching and advising. It can free faculty for students, not from them. But to make sure that technology is used for purposes other than merely saving money, student learning will have to be carefully assessed to determine what students can learn aided by a computer rather than by a teacher; when the large-lecture format can work, and how it can be made to work both more efficiently and better with a judicious use of technology; and where there is no substitute for a student on one end of the log and a teacher on the other.

Many faculty and institutions already are moving toward using technology. Here is what the Report on the University Task Force on the Impact of Digital Technology on the Classroom Environment, produced by Virginia Tech, said about "breaking the mold":

> The overwhelmingly dominant model of instruction in American university education, especially at the undergraduate level, is credit-for-contact. In this model, the student's progress and the faculty member's instructional contribution are measured by hours of contact in lecture hall, seminar room, or laboratory. Consequently, genuinely independent study is effectively discouraged, and true tutorial systems like those of Oxford and Cambridge are virtually absent in undergraduate education.
>
> However, the new digital technologies may make it possible to break this mold, thereby permitting the decoupling of contact from credit. A variety of formats should be able to coexist: fairly traditional lecture and laboratory courses, extensive independent study improved by remote access to resources and the ability to submit papers and reports electronically, group and individual tutorials supplemented by self-paced materials available in an assortment of media, and a wide variety of seminars. We hope not simply to replace one mold with another but to find ways to increase freedom without compromising quality.

In its Plan for the Year 2000, the University of Virginia endorses similar approaches to

learning:

> All students should be exposed to educational experiences that push the limits of their personal capabilities and thereby help them identify, test, and begin to refine their own unique talents, skills, and aspirations. This requires careful attention to the needs of individual students, as well as innovative pedagogical offerings and technologies. We encourage students to develop intellectual autonomy and direct their own learning.

There are undoubtedly many other long-term changes the higher education community must undertake to meet the dual imperatives of efficiency and effectiveness. Many of these changes will challenge academic tradition and culture and may face resistance from students as well as faculty. Others may tread on strongly held bureaucratic claims. But, in spite of the risk and the emotional costs, long-term change -- fundamental and constructive -- is vital if higher education is to lead the state and nation into an uncertain future.